

DETAILED ACTION

Response to Amendment

1. The response filed November 5, 2009 is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. Applicant elected Group I, Species B in the reply filed on May 14, 2009. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
4. Claims 4, 13, 19 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention/species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 14, 2009.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "low flow dry chemical discharge tip discharges approximately toward the middle of the interior of the

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tank” recited in claim 29 must be shown or the feature(s) canceled from the claim(s).

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claims 2-4, 14, 16, 33-35 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the

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claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The dependent method claims fail to provide method steps.

Claim Rejections - 35 USC § 112

7. Claims 1-3, 5-12, 14-18, 20-24, 26-29, 32-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "difficult" in claim 1 is a relative term which renders the claim indefinite. The term "difficult" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what type of fire is limited by the claim.

Regarding claim 1, the preamble recites a "method" having and intended use "for treating a difficult to extinguish flammable liquid fire associated with a tank having a roof and a substantially enclosed space above liquid in the tank and below the roof." The body of the claim includes recitations directed to "a surface of the liquid within the tank" and "a space between the roof and said blanket." The preamble is directed to a subcombination of a method but the body of the claim is directed to a combination of a method, tank and liquid. Recommend deleting "for" in line 1 and replacing with --of--.

Claim 1 recites the limitation "a space" in line 6. It appears to be a double inclusion of the "substantially enclosed space" recited in line 2.

Claim 1 recites the limitation "roof structure" in line 7. There is insufficient antecedent basis for this limitation in the claim. Additionally, it appears to be a double inclusion of the "fixed roof" and/or "internal roof" recited in line 2. If so, it is uncertain whether the reference is to the "fixed roof" or the "internal roof."

In claims 2 and 3, the recitation "NFPA regulated" renders the claims indefinite.

Claim 2 recites "an NFPA regulated foam/film blanket" in line 2. It appears to be a double inclusion of the "foam/film blanket" recited in claim 1, line 4.

Claim 3 recites the limitation "the last 10 minutes" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

The term "difficult" in claim 5 is a relative term which renders the claim indefinite. The term "difficult" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what type of flammable liquid is limited by the claim.

Regarding claim 5, the preamble recites a "fixed foam/dry chemical system" having and intended use "for an industrial size tank with a roof having space above a difficult to extinguish flammable liquid in the tank and below the roof." The body of the claim includes recitations directed to "the tank" and "the space under the roof the tank." The preamble is directed to a subcombination of a system but the body of the claim is directed to a combination of a system and tank. Recommend deleting "for" in line 1 and replacing with --comprising-- and updating the body of the claim to avoid double inclusions.

Claim 5 recites the limitation "the roof" in line 9. It is uncertain whether the reference is to the "internal roof" or the "fixed roof."

The term "difficult" in claim 8 is a relative term which renders the claim indefinite. The term "difficult" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what type of flammable liquid is limited by the claim.

Regarding claim 8, the preamble recites a "method" having and intended use "for extinguishing a fire of a difficult to extinguish fuel or flammable liquid in an industrial scale storage tank with at least a significant fixed top roof portion and having an interior roof." The body of the claim includes recitations directed to "a surface of the liquid within the tank" and "a space between the roof and said blanket." The preamble is directed to a subcombination of a method but the body of the claim is directed to a combination of a method, tank and liquid. Recommend deleting "for" in line 1 and replacing with --of--.

In claims 8 and 9, the recitation "NFPA recommended" renders the claims indefinite.

Claim 8 recites the limitation "roof structure" in line 8. There is insufficient antecedent basis for this limitation in the claim. Additionally, it appears to be a double inclusion of the "significant fixed top roof portion" and/or "internal roof" recited in lines 2-3. If so, it is uncertain whether the reference is to the "significant fixed top roof portion" or the "internal roof."

Claim 15 recites the limitation “floater” in line 1. It appears to be a double inclusion of the “interior roof” recited in claim 8, line 3.

Claim 15 recites the limitation “a cavity” in line 2. It appears to be a double inclusion of the “cavity” recited in claim 8, line 4.

The term "difficult" in claim 17 is a relative term which renders the claim indefinite. The term "difficult" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what type of fire is limited by the claim.

Regarding claim 17, the preamble recites an “apparatus” having and intended use “for extinguishing a difficult to extinguish fuel or flammable liquid fire in an industrial scale storage tank with a fixed roof portion, an internal roof and at least one vent opening into a space defined above the fuel/liquid and/or internal roof surface and a fixed roof portion.” The body of the claim includes recitations directed to "the tank" and "the space under the roof of the tank." The preamble is directed to a subcombination of an apparatus but the body of the claim is directed to a combination of a system and tank. Recommend deleting “for” in line 1 and replacing with –comprising-- and updating the body of the claim to avoid double inclusions.

Claim 23 recites the limitation “floater” in line 1. It appears to be a double inclusion of the “interior roof” recited in claim 17, line 2.

The term "low" in claim 26 is a relative term which renders the claim indefinite. The term "low" is not defined by the claim, the specification does not provide a standard

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for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what type of flow rate is limited by the claim.

The term "high" in claim 27 is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what type of flow rate is limited by the claim.

Regarding claim 32, the preamble recites a "method" having and intended use "for extinguishing fire in an industrial scale storage tank having a fixed top roof and an interior roof." The body of the claim includes recitations directed to "a surface of the liquid within the tank" and "a space between the roof and said blanket." The preamble is directed to a subcombination of a method but the body of the claim is directed to a combination of a method, tank and liquid. Recommend deleting "for" in line 1 and replacing with --of--.

Claim Rejections - 35 USC § 102

8. Claims 1, 32-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharma et al. (5,573,068).

Sharma discloses a method comprising:

establishing a foam blanket over at least 90% (column 1, line 22, column 4, lines 7 and 44-46: uniform discharge for blanketing the flammable liquid);

discharging dry powder (abstract, lines 2-3, column 4, lines 47-50).

Sharma discloses a system comprising:

at least one foam conduit 6 (column 4, lines 14-20) in valved fluid communication (through valve 5) with an interior of the tank 7 through at least one opening (entry opening in tank 7 for conduit 6);

at least one dry chemical conduit 6 (column 4, lines 4-20) in valved fluid communication (through valve 5) with the space under the roof of the tank through said at least one opening (entry opening in tank 7 for conduit 6);

a nozzle 4.

Claim Rejections - 35 USC § 103

9. Claims 5 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Kaylor (5,464,065) in view of Williams et al. (5,913,366).

Kaylor discloses a tank 12 having a fixed roof 70 and an internal roof 47. Kaylor teaches a foam conduit 78 to apply a foam blanket 95. Kaylor differs from the claimed invention in the dry chemical.

Williams discloses foam nozzle 48 and foam/dry powder nozzles 54 to applying foam then dry powder. See claims 8 and 9.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided a separate dry powder conduit and nozzle to the device of Kaylor as taught by Williams to complete extinguishing of the fire.

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10. Claims 5 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Kaylor (5,464,065) in view of Boyd (1,917,694) and Williams et al. (5,913,366).

Kaylor discloses a tank 12 having a fixed roof 70 and an internal roof 47. Kaylor teaches a foam conduit 78 to apply a foam blanket 95. Kaylor differs from the claimed invention in the dry chemical.

Body teaches a foam conduit 7 and nozzle 25.

Williams discloses foam nozzle 48 and foam/dry powder nozzles 54 to applying foam then dry powder. See claims 8 and 9.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided a foam and dry powder conduit/nozzle to the device of Kaylor as taught by Body and Williams to complete extinguishing of the fire.

11. Claims 1-3, 8-12, 14, 16-18, 20-22, 24, 32-35 rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd (1,917,694) in view of Williams et al. (5,913,366) or Foden et al. (2,996,119).

Boyd discloses a system comprising a tank 1 having roof 3, vent 13, nozzle 8.

Boyd differs from what is being claimed in the dry powder. Boyd discloses using foam.

Williams discloses, in claims 8 and 9, applying foam then dry powder.

Foden discloses, in column 3, lines 1-10 and column 4, lines 21-31, applying foam then dry powder.

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It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided foam then dry powder in the device of Boyd as taught by Williams or Foden to complete the extinguishing (Foden, column 3, lines 5-6).

12. Claims 15, 23 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd (1,917,694) in view of Williams et al. (5,913,366) or Foden et al. (2,996,119) as applied to claims 8 and 17 above, and further in view of Baum (3,687,329).

Boyd in view of Williams or Foden discloses the limitations of the claimed invention except the floater.

Baum discloses a floater 8.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided a floater in the device of Boyd in view of Williams or Foden as taught by Baum for a protective blanket (Baum, column 2, line 67).

Response to Arguments

13. Applicant's arguments filed November 5, 2009 have been fully considered but they are not persuasive.

Applicant argues that the term "difficult" is defined in the specification on page 3, line 8-14. The specification does not provide a standard for ascertaining the requisite degree for the relative term "difficult" because it further uses relative terms "low" and "high" to define the relative term "difficult."

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Applicant argues that the recitation "NFPA regulated" is not indefinite because ordinary skilled artisan should have access to a copy of the NFPA recommendations and regulations. The reference to NFPA regulations is indefinite because the regulations can change.

Applicant argues that Sharma teaches to use either foam or dry chemical but not both. Sharma discloses, in the abstract, lines 2-3, "either foam or dry chemical, or both, as the extinguishant."

Applicant argues that Sharma does not teach when or why to use both the foam and dry chemical. When both are used in Sharma, the dry chemical dispersed later in the flow is subsequent to the foam that is dispersed earlier in the flow.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher S. Kim/
Primary Examiner, Art Unit 3752

CK